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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,318	12/03/2003	Eric Van Hensbergen	AUS920030763US1	6211
61043	7590	08/30/2006	EXAMINER	
IBM CORPORATION (MH) c/o MITCH HARRIS, ATTORNEY AT LAW, L.L.C. P.O. BOX 515 LAKEMONT, GA 30552-0515			SUGENT, JAMES F	
			ART UNIT	PAPER NUMBER
			2116	

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,318

Applicant(s)

HENSBERGEN ET AL.

Examiner

James F. Sugent

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/7/06 & 6/10/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is sent in response to Applicant's Communication received June 20, 2006 for application number 10/727318 originally filed December 3, 2003. The Office hereby
5 acknowledges receipt of the following and placed of record in file: amended claims 1-30 are presented for examination.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on April 7, 2006 and June 10,
10 2006 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

The Examiner acknowledges and thanks the Applicant for the claim amendments to the
15 objections of claims 3, 13, 18, 23 and 28. The claim objections have been overcome.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
20 in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

25 Claims 1-6, 9-16, 19-26 and 29-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Greene (U.S. Patent No. 6,775,787 B2) (hereinafter referred to as Greene).

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As to claim 1, Greene discloses a method of managing energy in a processing system, comprising: receiving an indication of a need to reduce a energy usage level in said processing system at a scheduler (208) (column 4, lines 43-50 and column 6, lines 52-54); determining whether or not a next process to be scheduled has an associated level of energy usage greater
5 than a threshold (column 7, lines 50-56); and selectively scheduling an execution slice for said next process in response to determining that said associated level of energy usage does not exceed said threshold, and not scheduling said execution slice for said next process in response to determining that said associated level of energy usage does exceed threshold (column 8, lines 39-43 and column 8, lines 50-65).

10 As to claim 2, Greene further discloses the method further comprising: reading values of a plurality of performance counters during one or more previous execution slices of said next process; and estimating said associated level of energy usage in conformity with said values of said plurality of performance counters (column 5, lines 52-64).

15 As to claim 3, Greene further discloses the method further comprising: measuring actual energy usage of said processing system during one or more previous execution slices of said next process; and estimating said associated level of energy usage in conformity with said measured energy usage (column 5, lines 52-64).

As to claim 4, Greene further discloses the method further comprising: second
determining a resource usage of said next process; and estimating said associated level of energy
20 usage in conformity with said resource usage (column 8, lines 20-30).

As to claims 5 and 6, it is directed to the method of steps set forth in claims 1 and 4.
Therefore, it is rejected for the same basis as set forth hereinabove.

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As to claim 9, Greene further discloses the method wherein said selectively scheduling inserts idle slices into an execution queue, whereby said energy usage level is reduced (column 8, lines 50-65).

As to claim 10, Greene further discloses the method wherein said selectively scheduling
5 schedules a second process having a lower level of energy usage than said next process in preference over said next process (column 8, line 66 thru column 9, line 20).

As to claim 11, a processing system, comprising: a processor (102 or 104); a memory (132) coupled to said processor (via MCH 130) for storing program instructions and data values, and wherein said program instructions comprise an operating system scheduler (208) that
10 includes program instructions (column 2, line 58 thru column 3, line 7) for: receiving an indication of a need to reduce a energy usage level in said processing system at a scheduler (column 4, lines 43-50 and column 6, lines 52-54); determining whether or not a next process to be scheduled has an associated level of energy usage greater than a threshold (column 7, lines 50-56); and selectively scheduling an execution slice for said next process in response to
15 determining that said associated level of energy usage does not exceed said threshold, and not scheduling said execution slice for said next process in response to determining that said associated level of energy usage does exceed threshold (column 8, lines 39-43 and column 8, lines 50-65).

As to claim 12, Greene further discloses the processing system wherein said program
20 instructions further comprise program instructions for: reading values of a plurality of performance counters during one or more previous execution slices of said next process; and

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estimating said associated level of energy usage in conformity with said values of said plurality of performance counters (column 5, lines 52-64).

As to claim 13, Greene further discloses the processing system wherein said program instructions further comprise program instructions for: measuring actual energy usage of said processing system during one or more previous execution slices of said next process; and
5 estimating said associated level of energy usage in conformity with said measured energy usage (column 5, lines 52-64).

As to claim 14, Greene further discloses the processing system wherein said program instructions further comprise program instructions for: second determining a resource usage of
10 said next process; and estimating said associated level of energy usage in conformity with said resource usage (column 8, lines 20-30).

As to claims 15 and 16, it is directed to the processing system of steps set forth in claims 11 and 14. Therefore, it is rejected for the same basis as set forth hereinabove.

As to claim 19, Greene further discloses the processing system wherein said program
15 instructions for selectively scheduling insert idle slices into an execution queue, whereby said energy usage level is reduced (column 8, lines 50-65).

As to claim 20, Greene further discloses the processing system wherein said program instructions for selectively scheduling schedule a second process having a lower level of energy usage than said next process in preference over said next process (column 8, line 66 thru column
20 9, line 20).

As to claim 21, Greene discloses a computer program product comprising signal-bearing media encoding program instructions and data, wherein said program instructions comprise an

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operating system scheduler (208) that includes program instructions (column 2, line 58 thru column 3, line 7) for: receiving an indication of a need to reduce a energy usage level in said processing system at a scheduler (column 4, lines 43-50 and column 6, lines 52-54); determining whether or not a next process to be scheduled has an associated level of energy usage greater
5 than a threshold; and, selectively scheduling an execution slice for said next process in response to determining that said associated level of energy usage does not exceed said threshold, and not scheduling said execution slice for said next process in response to determining that said associated level of energy usage does exceed threshold.

As to claim 22, Greene further discloses the computer program product wherein said is
10 program instructions further comprise program instructions for: reading values of a plurality of performance counters during one or more previous execution slices of said next process; and estimating said associated level of energy usage in conformity with said values of said plurality of performance counters (column 5, lines 52-64).

As to claim 23, Greene further discloses the computer program product wherein said
15 program instructions further comprise program instructions for: measuring actual energy usage of said processing system during one or more previous execution slices of said next process; and estimating said associated level of energy usage in conformity with said measured energy usage (column 5, lines 52-64).

As to claim 24, Greene further discloses the computer program product wherein said
20 program instructions further comprise program instructions for: second determining a resource usage of said next process; and estimating said associated level of energy usage in conformity with said resource usage (column 8, lines 20-30).

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As to claims 25 and 26, it is directed to the computer program product of steps set forth in claims 21 and 24. Therefore, it is rejected for the same basis as set forth hereinabove.

As to claim 29, Greene further discloses the computer program product wherein said program instructions for selectively scheduling insert idle slices into an execution queue,

5 whereby said energy usage level is reduced (column 8, lines 50-65).

As to claim 30, Greene further discloses the computer program product wherein said program instructions for selectively scheduling schedule a second process having a lower level of energy usage than said next process in preference over said next process (column 8, line 66 thru column 9, line 20).

10

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

15 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20 The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
- 25 3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7, 8, 17, 18, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greene (as cited above) as applied to claims 1, 11 and 21 above, and further in view of Sadashivaiah (U.S. Patent No. 5,638,541) (hereinafter referred to as Sadashivaiah).

As to claim 7, Greene further discloses the method of claim 1, further comprising: issuing
5 a pragmatic warning fault indicating that a system energy usage above a system energy threshold associated with said next process (Determining and using indication of the next process energy level threshold exceeding inherently necessitates issuing a warning; column 7, lines 50-56). However, Greene fails to explicitly disclose second receiving said pragmatic warning fault at an application, and in response to said second receiving, reducing a resource usage within said
10 application, whereby a energy usage of said next process is reduced.

Sadashivaiah teaches a power management system and method wherein application software receives a warning of power management indicators and responds with an acknowledgement signal which reduces resource usage dependent on the power level indicators (steps 625 and 635; column 7, line 55 thru column 8, line 18). Sadashivaiah has the additional
15 feature of being attached to a network and supporting time scheduled events (column 2, lines 54-59).

It would have been obvious to one of ordinary skill of the art having the teachings of Greene and Sadashivaiah at the time the invention was made, to modify method of Greene to include receiving a warning at an application associated with the next instruction and in response
20 to said warning, reducing a resource usage within said application as taught by Sadashivaiah. One of ordinary skill in the art would be motivated to make this combination of including receiving a warning at an application associated with the next instruction and in response to said

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warning, reducing a resource usage within said application in view of the teachings of Sadashivaiah, as doing so would give the added benefit of being attached to a network and supporting time scheduled events (as taught by Sadashivaiah above).

As to claim 8, it is directed to the method of steps set forth in claims 1 and 7. Therefore,
5 it is rejected for the same basis as set forth hereinabove.

As to claim 17, Greene further discloses the processing system of claim 11, wherein said program instructions further comprise program instructions for: issuing a pragmatic warning fault indicating that a system energy usage above a system energy threshold associated with said next process (Determining and using indication of the next process energy level threshold
10 exceeding inherently necessitates issuing a warning; column 7, lines 50-56). However, Greene fails to explicitly disclose second receiving said pragmatic warning fault at an application, and in response to said second receiving, reducing a resource usage within said application, whereby a energy usage of said next process is reduced.

Sadashivaiah teaches a power management system and method wherein application
15 software receives a warning of power management indicators and responds with an acknowledgement signal which reduces resource usage dependent on the power level indicators (steps 625 and 635; column 7, line 55 thru column 8, line 18). Sadashivaiah has the additional feature of being attached to a network and supporting time scheduled events (column 2, lines 54-59).

20 It would have been obvious to one of ordinary skill of the art having the teachings of Greene and Sadashivaiah at the time the invention was made, to modify method of Greene to include receiving a warning at an application associated with the next instruction and in response

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to said warning, reducing a resource usage within said application as taught by Sadashivaiah.

One of ordinary skill in the art would be motivated to make this combination of including receiving a warning at an application associated with the next instruction and in response to said warning, reducing a resource usage within said application in view of the teachings of

- 5 Sadashivaiah, as doing so would give the added benefit of being attached to a network and supporting time scheduled events (as taught by Sadashivaiah above).

As to claim 18, it is directed to the processing system of steps set forth in claims 11 and 17. Therefore, it is rejected for the same basis as set forth hereinabove.

- As to claim 27, Greene further discloses the computer program product of claim 21,
- 10 wherein said program instructions further comprise program instructions for: issuing a pragmatic warning fault indicating that a system energy usage above a system energy threshold associated with said next process (Determining and using indication of the next process energy level threshold exceeding inherently necessitates issuing a warning; column 7, lines 50-56). However, Greene fails to explicitly disclose second receiving said pragmatic warning fault at an
- 15 application, and in response to said second receiving, reducing a resource usage within said application, whereby a energy usage of said next process is reduced.

- Sadashivaiah teaches a power management system and method wherein application software receives a warning of power management indicators and responds with an acknowledgement signal which reduces resource usage dependent on the power level indicators
- 20 (steps 625 and 635; column 7, line 55 thru column 8, line 18). Sadashivaiah has the additional feature of being attached to a network and supporting time scheduled events (column 2, lines 54-59).

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It would have been obvious to one of ordinary skill of the art having the teachings of Greene and Sadashivaiah at the time the invention was made, to modify method of Greene to include receiving a warning at an application associated with the next instruction and in response to said warning, reducing a resource usage within said application as taught by Sadashivaiah.

5 One of ordinary skill in the art would be motivated to make this combination of including receiving a warning at an application associated with the next instruction and in response to said warning, reducing a resource usage within said application in view of the teachings of Sadashivaiah, as doing so would give the added benefit of being attached to a network and supporting time scheduled events (as taught by Sadashivaiah above).

10 As to claim 28, it is directed to the computer program product of steps set forth in claims 21 and 27. Therefore, it is rejected for the same basis as set forth hereinabove.

Response to Arguments

Applicant's arguments with respect to claims 1-30 have been considered but are moot in
15 view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).
20 Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sugent whose telephone number is (571) 272-5726. The examiner can normally be reached on 8AM - 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or (571) 272-1000.

James F. Sugent
Patent Examiner, Art Unit 2116
August 24, 2006


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